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# HEALTH STATISTICS

FROM THE U. S. NATIONAL HEALTH SURVEY

## Diabetes reported in interviews

United States  
July 1957 - June 1959

Statistics on prevalence of diabetes and associated disability by age, sex, and medical care status. Based on data collected in household interviews during the period July 1957-June 1959.

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The U. S. National Health Survey is a continuing program under which the Public Health Service makes studies to determine the extent of illness and disability in the population of the United States and to gather related information. It is authorized by Public Law 652, 84th Congress.

## CO-OPERATION OF THE BUREAU OF THE CENSUS

Under the legislation establishing the National Health Survey, the Public Health Service is authorized to use, insofar as possible, the services or facilities of other Federal, State, or private agencies. For the Health Interview Survey the Bureau of the Census designed and selected the sample, conducted the household interviews, and processed the data in accordance with specifications established by the Public Health Service.

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# SYMBOLS AND NOTES

Data not available (three dashes)-----	---
Category not applicable (three dots)-----	...
Quantity is zero (1 dash)-----	-
Magnitude greater than zero but less than one-half of the unit used-----	0 or 0.0
Magnitude of the sampling error precludes showing separate estimates-----	(*)

NOTE: Due to rounding detailed figures within  
tables may not add to totals

# DIABETES

The need to find and control cases of diabetes, and thus to prevent or to postpone disability and deaths due to it—rather than excessive prevalence—makes this chronic disease one of the major health problems in the United States today. Diabetes mellitus ranks far below such chronic conditions as heart disease and hypertension in number of cases and deaths, but it is nevertheless eighth among the 10 leading causes of death, and fifth among diseases usually regarded as chronic, exceeded only by diseases of heart, cancer, vascular lesions of the central nervous system, and general arteriosclerosis, in that order. For the year ending December 1958, there were 27,500 deaths caused by diabetes mellitus, with a rate of 15.9 per 100,000 population.<sup>1</sup>

The introduction of insulin in 1922, and continued research since then to improve it and other therapeutic measures fortunately have changed the status of diabetes from a disease with a very serious outlook to one that, if diagnosed early, in many cases can be controlled, thus permitting the patient to live practically a normal life.<sup>2</sup> In order to locate the diabetic or the potential diabetic, large-scale mass screening programs have been organized and conducted over the past 20 years by Federal and local health agencies and such private organizations as the American Diabetes Association. The results of these efforts, and of such studies as that of Wilkerson and Krall,<sup>3</sup> have led investigators to the opinion that the number of unsuspected cases of diabetes in this country may be equal to the known cases or very nearly so.

The volume of medical literature on all phases of this disease is enormous. Much has been published on the statistics of diabetes, in terms of both the known and the undiscovered cases. Prevalence estimates based on the results of physical examinations and clinical records will obviously differ from estimates from the findings in household interview surveys. Objectives, techniques, definitions, and resulting estimates may vary considerably even between studies of the same general class and time period. It is to be expected that

differences should exist between estimates obtained from records prepared by trained clinical examiners and those resulting from responses given by household members who may or may not be co-operative and well-informed.

Diabetes prevalence data included here can of course deal only with those cases: (1) which have been diagnosed; (2) about which the family has been informed; and (3) which are believed by the family to have been present in the year prior to the interview.

## SOURCE AND CLASSIFICATION OF DATA

Data on diabetes presented in this report are based primarily on replies to four "illness-recall" questions:

1. Were you sick at any time last week or the week before?
2. Last week or the week before did you take any medicine or treatment for any condition?
3. At the present time do you have any ailments or conditions that have lasted for a long time? (If "No") Even though they don't bother you all the time?
4. Has anyone in the family...had any of these conditions during the past 12 months? (Interviewer reads list of major chronic conditions which includes "diabetes.")

Positive responses may come from any one or more of the four questions. The unduplicated positive replies serve as the basis for estimates of the prevalence of diabetes in the population. Because these estimates are based on a continuing sample of household interviews throughout a 24-month period July 1957-June 1959, the prevalence is actually the average number of cases of diabetes reported by the people during that period.

Additional questions are asked to obtain information about medical attention and disability. Replies to these are used to establish the extent to which diabetics have medical care and are or are not restricted or limited in their daily living.

This report was prepared by Louise K. Sello, of the U. S. National Health Survey staff.

Reports of "diabetes" were assumed to mean "diabetes mellitus," and were classified under category 260 (diabetes mellitus), of the International Classification of Diseases, 1955 Revision. It is possible that cases such as "renal diabetes," "bronze diabetes," or "diabetes insipidus" could have been reported only as "diabetes," but these conditions are too infrequent to have any appreciable effect on the results. However, if the respondent knew and reported such modifiers as "renal," "bronze," "insipidus," the appropriate codes for these would have been selected. Terms such as "sugar in urine," or "sugar in blood," were not counted as cases of diabetes unless diabetes was also mentioned.

Impairments and certain other conditions reported to be due to diabetes were recorded separately under their own code numbers, but the code 260 was also applied. Minor symptoms due to diabetes were coded only to the diabetes category. Code 260 was assigned only once per person with diabetes and is the only condition code included in these data. Therefore the total cases with mention of diabetes, complicated or uncomplicated, represent the total number of diabetics in the survey.

Terminology used by the household members did not constitute a problem because if they knew and reported that they had diabetes they used the single term "diabetes" in nearly all cases. The matter of self-diagnosis is considered to be a minor source of error because the layman is very unlikely to believe that he has diabetes unless he has been told by a medical person that he has this condition.

A description of the statistical design of the household survey and general qualifications of the data presented in this report is given in Appendix I. Particular attention is called to the section in Appendix I on Reliability of Estimates, which includes tables of sampling errors and instructions for their use. Explanations and definitions of special terms and concepts are presented in Appendix II.

## PREVALENCE OF DIABETES ACCORDING TO SEX AND AGE

Based on U. S. National Health Survey data collected during the period July 1957-June 1959, the prevalence of diabetes in the United States is estimated to be 1½ million cases, a rate of 9 cases per 1,000 population. This figure probably represents a slight underestimate of the known cases since it does not include the diabetics living in old-age homes and other resident institutions.

The 1935-36 National Health Survey provided an estimate of roughly 3 known cases of diabetes per 1,000 population. On the basis of this rate a national estimate of 660,000 cases as of 1937 was made.<sup>4</sup> Reasons for the large increase in cases

of diabetes over the past 20-25 years undoubtedly include the continuing national concentration upon case-finding, mentioned earlier in this report, the increase in the population particularly of the older age groups, the increased longevity of diabetics, and the possibility that physicians are now diagnosing as diabetes quite mild cases, based on laboratory findings, which in 1935 would not have been called diabetes.

As indicative of the prevalence rates found in studies conducted by means of clinical examinations of samples of the population, the previously mentioned study of Wilkerson and Krall<sup>5</sup> in Oxford, Massachusetts, in 1946 and 1947, and the studies conducted under the sponsorship of the Commission on Chronic Illness in Baltimore, Maryland<sup>6</sup> and Hunterdon County, New Jersey, (1953-54)<sup>7</sup> may be cited. In Oxford, a prevalence rate of 17 per 1,000 population was found. The Baltimore and Hunterdon County studies yielded rates of 27 per 1,000 and 10 per 1,000, respectively. In each instance the prevalence rate included, of course, both the previously known cases and those discovered during the study.

The estimate of 9 cases per 1,000 population produced by the health-interview phase of the present National Health Survey is only slightly higher than the rates found in two other recent interview surveys: 8.7 per 1,000 in the 1955-57 Hagerstown, Maryland, study<sup>7</sup> and 7.7 per 1,000 in the Kansas City Metropolitan Area Health Survey (Dec. 1954-Jan. 1957).<sup>8</sup>

A lower rate of 5.5 per 1,000 was reported in the California Health Survey (1954-55).<sup>9</sup> Remes;<sup>10</sup> who estimated the prevalence of known diabetes in the United States for the year 1958 to be 8.8 per 1,000 population, has commented upon this low California rate as follows: "The relationship between mortality and prevalence is by no means a sure one, but the mortality rate from diabetes in California is only two thirds that of the United States as a whole. It is therefore conceivable that the prevalence of known diabetes is considerably less in California than in the nation as a whole."

Diabetes is essentially a disease of middle and old age, as indicated in figure 1 and table 1. Two thirds of all diabetics reported in the survey were 55 years of age or older. Females outnumber males in every age group over 45, most noticeably at ages 65-74 (table A). The rate per 1,000 persons drops for both sexes after 74 years of age, but more sharply for females than for males of this age; it is probable that the exclusion of patients in resident institutions accounts for some of this drop.

The survey estimate of the prevalence of diabetes among persons in the younger age groups, particularly those under 25, should be interpreted with great caution. It is generally recognized that diabetes is rare among young people, but the survey figure of 0.9 per 1,000 persons under 25 years of age could be quite unrealistic because of errors of sampling.



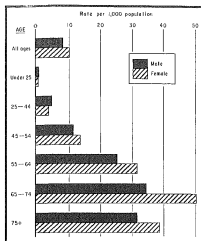


Figure 1. Number of persons reported to have diabetes per 1,000 population by sex and age.

Table A. Prevalence of known cases of diabetes per 1,000 population and ratio of females to males as reported in interviews: United States, July 1957-June 1959

Age	Prevalence per 1,000 population		Ratio of females to males
	Female	Male	
All ages--	10.0	8.0	1.25
0-24-----	(*)	(*)	(*)
25-44-----	3.9	4.9	0.79
45-54-----	13.7	11.2	1.22
55-64-----	31.5	25.2	1.25
65-74-----	50.3	34.4	1.46
75+-----	38.8	31.5	1.23

## DIABETES ACCORDING TO MEDICAL CARE STATUS

Table 1 shows that practically all cases had been attended by a physician at some time, and that a very large proportion (about 92 percent)

were "under care" at the time of the interview (table B). Persons "under care" are those for whom a positive response was obtained to the question "Do you still take any medicine or treatment that the doctor prescribed for diabetes? Or follow any advice he gave?" The small percent of all diabetics who replied "no" were those who may not have fully understood the question, or those who may have been feeling well at the time and were risking the cessation of control measures.

Table B. Number and percent of cases of diabetes under medical care: United States, July 1957-June 1959

Age	Total cases of diabetes	Cases under medical care	
		Number (in thousands)	Percent
All ages--	1,530	1,404	91.8
0-24-----	67	61	91.0
25-44-----	199	181	91.0
45-54-----	246	222	90.2
55-64-----	424	392	92.5
65-74-----	416	388	93.3
75+-----	177	159	89.8

## DISABILITY DUE TO DIABETES

There are a number of factors inherent in the nature of this disease, its age and sex distribution and its potential for control, which are likely to make it a relatively minor cause of disability, especially when institutionalized cases are excluded. The survey findings point out the considerable extent to which many diabetics regard themselves as not restricted or limited because of this condition. It is possible, of course, that some who had disabling complications of diabetes—such as failing vision or nephritis—attributed their disability to the complication only, and not to the underlying diabetes.

The 1½ million cases of diabetes were responsible for less than 2 million work-loss days among the "usually working" population, without 1 million of these days among males, and 705,000 among females. This low figure is not surprising, since the majority of diabetics, sick or well, are not members of the "usually working" population either because of their age, retirement status, or because they are females keeping house.

Ninety percent of the diabetics indicated that they had no chronic limitation of mobility due to diabetes. Even among diabetics over 65 years of

age (some 593,000 persons), 82 percent considered that this disease did not limit their ability to get around freely in the house or outside.

Seventy-five percent of the total reported that their diabetes did not affect the kinds or amounts of their day-to-day activities—working, keeping house, going to school, or whatever else that usually occupied them (table 2). Females over 65 years of age had the greatest amount of continuing limitation of this kind.

Table 3 indicates that 85 percent of all diabetics had had no bed-disability days, because of diabetes, in the 12 months prior to the interview.

Disability attributable to diabetes in terms of the number of days is shown in table 4. A day of restricted activity, by definition, is any day on which a person had to cut down on his usual activities for a whole day because of his condition whether or not he was confined to bed. Diabetes was responsible for about 30 million restricted-activity days of which 13 million were bed-disability days. When distributed among all diabetics the average number of restricted-activity days per case per year due to diabetes was about 20, with the average number of bed-days being 8.5.

Figure 2 shows the distribution of bed-days due to diabetes among all diabetics by age and sex. Females 65 years of age and older experienced more bed disability than any of the other age-sex groups.

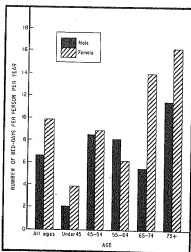


Figure 2. Average annual number of bed-disability days due to diabetes per diabetic by sex and age.

It is perhaps more realistic to consider the number of bed-days due to diabetes in relation only to those diabetics who had actually experienced bed disability since it has been shown in table 3 that 85 percent of all diabetics had had no bed-disability days. When averaged among the 15 percent who had had any bed-days (one or more), the number of bed-days in a year due to diabetes becomes 56.2, with persons over 65 experiencing about 80 days per year (table C).

Table C. Number of bed-days per year due to diabetes per diabetic, and per diabetic having one or more bed-days: United States, July 1957-June 1959

Age	Number of bed-days due to diabetes	
	Per diabetic	Per diabetic having 1+ bed-days
All ages--	8.5	56.2
0-44-----	2.9	16.4
45-54-----	8.8	58.2
55-64-----	7.1	52.9
65-74-----	10.8	78.6
75+-----	14.5	79.9

## SUMMARY

The average prevalence of known cases of diabetes, based on an estimate from the U.S. National Health Survey household interview sample, was a 18 million cases, corresponding to a rate of 9 per 1,000 population. The rate per 1,000 persons was higher among females than among males in each age group over 45, most noticeably at ages 65-74 where the prevalence rate for females was 50.3, and for males, 34.4.

Virtually all cases had been attended by a physician at some time and about 92 percent were still under care by, or instruction from, a physician at the time of the interview.

Ninety percent of the reported cases showed no chronic mobility limitation, and 75 percent were not chronically restricted as to daily activities. Eighty-five percent of the diabetics had had no bed-disability days in the year prior to interview because of diabetes. However, among those who had been confined to bed for one or more days because of this condition, the average annual number of such days was 56.2, with persons over 65 experiencing about 80 days per year.

## REFERENCES

<sup>1</sup>National Office of Vital Statistics: Vital Statistics of the United States, 1953, Vols. I and II. In press.

<sup>2</sup>American Diabetes Association, Inc.: Diabetes Abstracts. New York, N.Y., 1956.

<sup>3</sup>Wilkerson, H. L., and Kroll, L. P.: Diabetes in a New England Town. J. A. M. A. 135: 209-216, Sept. 27, 1947.

<sup>4</sup>National Health Survey, 1935-36. The Magnitude of the Chronic Disease Problem in the United States. Preliminary Reports, Sickness and Medical Care Series. Bulletin 6, Public Health Service, Washington, D. C., 1936.

<sup>5</sup>Commission on Chronic Illness in 1953-54: Chronic Illness in a Large City: The Baltimore Study (Chronic Illness in the United States, Vol. IV). Harvard University Press, Cambridge, Mass., 1953.

<sup>6</sup>Commission on Chronic Illness: Chronic Illness in a Rural Area: The Huxford Study (Chronic Illness in the United States, Vol. III). Harvard University Press, Cambridge, Mass., 1953.

<sup>7</sup>West, M. D., and Altenderfer, M. E.: Illness and Medical Care in Hagerstown, Maryland. I. The Prevalence of Chronic Disease in 1953-57 as Measured by Household Interviews. Public Health Service, Washington, D. C., Oct. 1958.

<sup>8</sup>Petersen, W. A.: Kansas City Metropolitan Area Health Survey. Community Studies, Inc.. Kansas City, Mo., June 1959.

<sup>9</sup>State of California, Department of Public Health: Health in California. California State Printing Office, Sacramento, Calif.

<sup>10</sup>Bazels, Q.: A Current Estimate of the Prevalence of Diabetes Mellitus in the United States. Annals of the New York Academy of Sciences, Vol. 82, Article 2, Pages 225-235, Sept. 25, 1959.

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Table 1. Average prevalence of diabetes according to medical care status as reported in interview and average prevalence per 1,000 population by sex and age: United States, July 1967-June 1969

[Data are based on household interviews during July 1967-June 1969. Data refer to the civilian noninstitutional population of the United States. The survey design, general qualifications, and information on the reliability of the estimates are given in Appendix 1. Definitions of terms are given in Appendix 1.]

Sex and age	Total cases	Medically attended cases		Total cases	Medically attended cases	
		Total	Under care		Total	Under care
<u>Both sexes</u>	Average number in thousands			Rate per 1,000 population		
All ages-----	1,530	1,525	1,404	9.0	9.0	8.3
0-24-----	67	66	61	0.9	0.9	0.8
25-44-----	199	198	181	4.4	4.3	4.0
45-54-----	246	246	222	12.4	12.4	11.2
55-64-----	424	423	392	28.4	28.3	26.3
65-74-----	416	416	388	42.9	42.9	40.0
75+-----	177	176	139	35.6	35.6	32.0
<u>Male</u>						
All ages-----	660	657	588	8.0	8.0	7.1
0-24-----	40	39	36	1.1	1.0	1.0
25-44-----	106	106	97	4.9	4.9	4.4
45-54-----	108	108	94	11.2	11.2	9.7
55-64-----	181	179	163	25.2	24.9	22.7
65-74-----	156	156	138	34.4	34.4	30.5
75+-----	68	67	60	31.5	31.1	27.8
<u>Female</u>						
All ages-----	871	868	816	10.0	10.0	9.4
0-24-----	27	27	26	0.7	0.7	0.7
25-44-----	93	92	84	3.9	3.9	3.5
45-54-----	139	138	129	13.7	13.6	12.7
55-64-----	244	244	229	31.5	31.5	29.6
65-74-----	260	259	250	50.3	50.1	48.4
75+-----	109	109	99	38.8	38.8	35.2

Table 2. Average number of diabetics and number and percent whose diabetes caused no chronic limitation of activity as reported in interviews by sex and age: United States, July 1958-June 1959

[Data are based on household interviews during July 1958-June 1959. Data refer to the civilian noninstitutional population of the United States. The survey design, general qualifications, and information on the reliability of the estimates are given in Appendix 1. Definitions of terms are given in Appendix 11]

Sex and age	Number of diabetics  (in thousands)	Diabetics whose diabetes caused no chronic limitation of activity	
		Number	Percent
<u>Both sexes</u>			
All ages-----	1,530	1,147	75.0
0-24-----	67	59	88.1
25-44-----	199	151	75.9
45-54-----	246	191	77.6
55-64-----	424	337	79.5
65-74-----	416	296	71.2
75+-----	177	112	63.3
<u>Male</u>			
All ages-----	660	522	79.1
0-24-----	40	36	90.0
25-44-----	106	83	80.2
45-54-----	108	90	83.3
55-64-----	181	147	81.2
65-74-----	156	118	75.6
75+-----	68	47	69.1
<u>Female</u>			
All ages-----	871	624	71.6
0-24-----	27	23	85.2
25-44-----	93	66	71.0
45-54-----	139	102	73.4
55-64-----	244	190	77.9
65-74-----	260	178	68.5
75+-----	109	63	59.6

Estimates in this table are based on the second year of data collection only. Therefore, the standard errors are 1.25 times the standard errors shown in Appendix 1.

Table 3. Average number of diabetics and number and percent whose diabetes caused no bed disability as reported in interviews by sex and age: United States, July 1957-June 1959

[Data are based on household interviews during July 1957-June 1959. Data refer to the civilian noninstitutional population of the United States. The survey design, general qualifications, and information on the reliability of the estimates are given in Appendix 1. Definitions of terms are given in Appendix II.]

Sex and age	Number of diabetics	Diabetics whose diabetes caused no bed disability	
		Number	Percent
		(in thousands)	
<u>Both sexes</u>			
All ages-----	1,530	1,300	85.0
0-24-----	67	53	79.1
25-44-----	199	166	83.4
45-54-----	246	209	85.0
55-64-----	424	367	86.6
65-74-----	416	359	86.3
75+-----	177	145	81.9
<u>Male</u>			
All ages-----	660	562	85.2
0-24-----	40	32	80.0
25-44-----	106	91	85.8
45-54-----	108	91	84.3
55-64-----	181	152	84.0
65-74-----	156	138	88.5
75+-----	68	58	85.3
<u>Female</u>			
All ages-----	871	738	84.7
0-24-----	27	21	77.8
25-44-----	93	76	81.7
45-54-----	139	118	84.9
55-64-----	244	215	88.1
65-74-----	260	220	84.6
75+-----	109	88	80.7

Table 4. Average annual number of disability days associated with diabetes as reported in interview and number of days per diabetic: United States, July 1957-June 1958

[Data are based on household interviews during July 1957-June 1958. Data refer to the civilian noninstitutional population of the United States. The survey design, general qualifications, and information on the reliability of the estimates are given in Appendix I. Definitions of terms are given in Appendix II.]

Sex and age	Disability days associated with diabetes			
	Restricted activity		Bed disability	
	Average number (in thousands)	Per diabetic per year	Average number (in thousands)	Per diabetic per year
<u>Both sexes</u>				
All ages-----	30,376	19.9	12,983	8.5
0-44-----	3,173	11.9	772	2.9
45-54-----	5,539	22.5	2,154	8.8
55-64-----	8,143	19.2	3,017	7.1
65-74-----	8,903	21.4	4,482	10.8
75+-----	4,619	26.1	2,558	14.5
<u>Male</u>				
All ages-----	11,228	17.0	4,349	6.6
0-44-----	932	6.3	503	2.1
45-54-----	2,428	22.5	916	8.5
55-64-----	3,866	21.4	1,493	8.2
65-74-----	2,680	17.2	852	5.5
75+-----	1,323	19.5	785	11.5
<u>Female</u>				
All ages-----	19,148	22.0	8,634	9.9
0-44-----	2,241	18.7	469	3.9
45-54-----	3,111	22.4	1,238	8.9
55-64-----	4,277	17.5	1,524	6.2
65-74-----	6,223	23.9	3,630	14.0
75+-----	3,296	30.2	1,774	16.3



Table 5. Average population used in obtaining rates shown in this publication by age and sex: United States, July 1957-June 1959

[Data are based on household interviews during July 1957-June 1959. Data refer to the civilian noninstitutional population of the United States. The survey design, general qualifications, and information on the reliability of the estimates are given in Appendix I. Definitions of terms are given in Appendix II.]

Age	Both sexes		Male		Female	
	Total	Persons with diabetes	Total	Persons with diabetes	Total	Persons with diabetes
Average population in thousands						
All ages-----	169,835	1,530	82,633	660	87,202	871
0-24-----	74,826	67	37,233	40	37,593	27
25-44-----	43,579	199	21,854	106	21,725	93
45-54-----	19,833	246	9,675	108	10,157	139
55-64-----	14,930	424	7,183	181	7,747	244
65-74-----	9,698	416	4,530	136	5,167	260
75+-----	4,969	177	2,157	68	2,812	109

NOTE: For official population estimates for more general use, see Bureau of the Census reports on the civilian population of the United States, in Current Population Reports: Series P-20, P-25, P-30, P-37, and P-60.

## APPENDIX I

### TECHNICAL NOTES ON METHODS

#### Background of This Report

This report on Diabetes is one of a series of statistical reports covering separate health-related topics which are prepared by the U.S. National Health Survey. The reports are based on information collected in the continuing nationwide sample of households in the Health Interview Survey, which is a main aspect of the program.

The Health Interview Survey uses a questionnaire which, in addition to personal and demographic characteristics, elicits information on illnesses, injuries, chronic conditions, medical care, dental care, and hospitalization. As interview data relating to each of these various broad subject areas are tabulated and analyzed, separate reports are issued covering one or more specific topics. The present report contains data for 104 weeks of interviewing ending June 28, 1959.

The population covered by the sample for the Health Interview Survey is the civilian population living in the United States at the time of the household interview. Although the sample collection covers persons who are inmates of institutions, data for these persons are not included in the figures given in these reports. Also the sample does not include members of the Armed Forces, United States nationals living in foreign countries, and crews of vessels.

#### Statistical Design of the Health Interview Survey

**General plan.**—The sampling plan of the survey follows a multistage probability design which permits a continuous sampling of the civilian population of the United States. This plan utilizes the 1,900 Primary Sampling Units consisting of counties, groups of contiguous counties, and Standard Metropolitan Statistical Areas into which the country has been divided. The first stage of the design consists of drawing a sample from these Primary Sampling Units (PSU's). During the first 18 months of the Health Interview Survey the sample size was 372 PSU's. This was increased to 500 PSU's in January 1959. However, the basic sampling design and methods of estimating remained unchanged during the two-year period covered by this report. The number of ratio estimating classes shown subsequently in this Appendix are those which applied to the first 18 months of the survey.

With no loss in general understanding, the remaining stages of the sampling can be telescoped and treated in this discussion as an ultimate stage. Within PSU's, then, ultimate stage units called segments are defined, also geographically, in such a manner that each segment contains an expected six households. Each week a random sample of about 120 segments is drawn. In the approximately 700 households in these segments, persons are interviewed concerning illnesses, injuries,

chronic conditions, disability, and other factors related to health.

The household members included each week are a representative sample of the population so that samples for successive weeks can be combined into larger samples for, say, a calendar quarter, a year, or more. Thus the design permits both continuous measurement of characteristics of high incidence or prevalence in the population and, through the larger consolidated samples, more detailed analysis of less common characteristics and smaller categories. The continuous collection has administrative and operational advantages as well as technical assets, since it permits field work to be handled with an experienced, stable staff.

**Sample size and geographic detail.**—The national sample plan during the 24-month period ending June 1959 included approximately 235,000 persons from 73,000 households in 12,200 segments. The over-all sample was designed in such a fashion that tabulations can be provided for various geographic sections of the United States and for urban and rural sectors of the Nation.

**Collection of data.**—The field operations for the household survey are performed by the Bureau of the Census under specifications established by the Public Health Service. In accordance with these specifications the Bureau of the Census designs and selects the sample, conducts the field interviewing, and edits and codes the questionnaires. Tabulations are prepared by the Public Health Service using the Bureau of the Census electronic computers.

**Estimating methods.**—Each statistic produced by the survey is the result of two stages of ratio estimation. In the first of these, the factor is the ratio of the 1950 decennial U.S. total population count to the estimated population in 1950 of the U.S. National Health Survey's first-stage sample of PSU's. This factor is applied separately for more than 50 color-residence classes.

Later, ratios of sample-produced estimates of the population to official Bureau of the Census figures for current population in about 60 age-sex-color classes are computed, and serve as second-stage factors for ratio estimating.

The effect of the ratio estimating process is to make the sample more closely representative of the population by age, sex, color, and residence, thus reducing sampling variance.

As noted, each week's sample represents the population living during that week and characteristics of that population. Consolidation of samples over a time period such as a calendar quarter produces estimates of average characteristics of the United States population for that calendar quarter.

For prevalence statistics based on two years of data collection, figures are first calculated for each calendar quarter by averaging estimates for all weeks of interviewing in that quarter. Prevalence data based

on eight quarters of interviewing are then obtained by averaging the eight quarterly figures.

For statistics measuring the number of occurrences during a specified time period, a similar computational procedure is used, but the statistics have a different interpretation. For the disability-day items, the interviewer asks for the respondent's experience over the two calendar weeks prior to the week of interview. Then, the estimated quarterly total for a statistic is simply 6.5 times the average two-week estimate produced by the 13 successive samples taken during the period. Thus, the experience of persons interviewed during a year—experience which actually occurred for each person in a two-calendar-week interval prior to week of interview—is treated in analysis as though it measured the total of such experience occurring in the year. For most statistics such interpretation leads to no significant bias. As noted earlier, the interviewing and estimation procedures are designed to reproduce the experience during the reference period of the questionnaire only for the population still living at the time of interview.

#### General Qualifications

**Nonresponse.**—Data are adjusted for nonresponse by a procedure which imputes to persons in a household not interviewed the characteristics of persons in households which were interviewed in the same segment. The total noninterview rate is 5 percent; 1 percent is refusal, and the remainder is accounted for by other reasons, such as failure to find any household respondent after repeated trials.

**The interview process.**—The statistics presented in this report are based on replies secured by interviewing members of the sampled households. Each person, 18 years and over, available at the time of interview, is interviewed individually. Proxy respondents within the household are employed for children and for adults who are not available at the time of the interview, provided the respondent is closely related to the person about whom information is being obtained.

There are limitations to the accuracy of diagnostic and other information collected in household interviews. For diagnostic information the household respondent, can, at best, pass on to the interviewer only the information the physician has given to the family. For conditions not medically attended, diagnostic information is often no more than a description of symptoms. However, other types of facts such as the number of disability days caused by the condition can be obtained more accurately from household members than from any other source.

**Rounding of numbers.**—The original tabulations on which data in this report are based show all estimates to the nearest whole unit. All consolidations are made from these original tabulations before the numbers are rounded to the nearest thousand for the published tables. Derived statistics such as rates and percent distributions are computed after the estimates have been rounded. Rounding to thousands has been done throughout this report even though, because of sampling error, the estimates may not be accurate to that detail.

**Population figures.**—Some of the published tables include population figures for specified categories. Except for certain over-all totals by age and sex (which are independently estimated), these figures are based on the sample of households in the U.S. National Health Survey. They are given primarily for the purpose of providing denominators for rate computation, and for

this purpose are more appropriate for use with the accompanying measures of health characteristics than other population data which may be available. In some instances they will permit users to recombine published data into classes more suitable to their specific needs. With the exception of the over-all totals by age and sex mentioned above, the population figures may in some cases differ from corresponding figures (which are derived from different sample surveys) published in reports of the Bureau of the Census. For population data for general use, see the official estimates presented in Bureau of the Census reports in the P-20, P-25, P-50, P-57, and P-60 series.

#### Reliability of Estimates

Since the estimates are based on a sample, they may differ somewhat from the figures that would have been obtained if a complete census had been taken using the same schedules, instructions, and interviewing personnel and procedures. As in any survey, the results are also subject to measurement error.

The standard error is primarily a measure of sampling variability, that is, the variations that might occur by chance because only a sample of the population is surveyed. As calculated for this report, the standard error also reflects part of the variation which arises in the measurement process. It does not include estimates of any biases which might lie in the data. The chances are about 68 out of 100 that an estimate from the sample differs from the value obtained from a complete census by less than the standard error. The chances are about 95 out of 100 that the difference is less than twice the standard error and about 99 out of 100 that it is less than 2.8 times as large.

In order to derive standard errors which are applicable to a wide variety of health statistics and which can be prepared at a moderate cost, a number of approximations are required. As a result, tables I through III, included in this Appendix should be interpreted as providing an estimate of the standard error rather than as the precise standard error for any specific statistic.

The following guides will enable the reader to determine sampling errors for the statistics presented in this report:

1. Approximate standard errors for estimates of the number of cases of a chronic condition, the number of disability days associated with a chronic condition, and the number of persons in a population group<sup>1</sup> are obtained from the appropriate columns of table I.
2. Approximate standard errors for percentage distributions of a chronic condition according to the number of bed-disability days or the extent of activity or mobility limitation associated with it are given in table II.
3. Approximate standard errors for prevalence estimates of a chronic condition per 1,000 persons in an age, sex, or color group or per 1,000 total population are obtained from table II. Since table II is set up for the estimation of the standard error of a rate per 100, the prevalence per 1,000 must first be converted to a percentage; table II is then entered with this percentage and the number of persons in the category (base of

<sup>1</sup>The number of persons in an age, sex, or color group, or the total number of persons in the population is not subject to sampling error.

the percentage). The entry in the body of the table must then be multiplied by 10 to apply to the rate per 1,000 persons.

4. Approximate standard errors of percentage distributions of disability days associated with a chronic condition (not computed in this report) are given in table III.

5. A rough approximation of the standard errors for rates showing the average number of disability days per "persons with the condition" per year<sup>2</sup> is obtained by taking the square root of the sum of the square of the standard error of the numerator used in obtaining the rate divided by the numerator itself and the square of the standard error of the denominator used divided by the denominator itself, and then multiplying by the rate. This computation will normally give an overestimate of the true sampling error.

Example:

It is estimated that each person with diabetes has an average of 8.5 days of bed disability per year because of diabetes (table 4). The numerator of 12,983,000 bed-disability days (table 4) has a standard error of 1,367,000. The denominator of 1,530,000 persons with diabetes (table 1) has a standard error of 71,000. Using these numbers as shown below yields an answer of 1.0, the standard error of the estimated rate.

$$8.5 \times \sqrt{\left(\frac{1,367,000}{12,983,000}\right)^2 + \left(\frac{71,000}{1,530,000}\right)^2} = 1.0$$

<sup>2</sup>Note that where the rate refers to persons in a disease category, rule 5 applies, even if the group is further subdivided by age, sex, or color.

Table 1. Standard errors of estimates of aggregates

(All numbers shown in thousands)

Size of estimate	Persons with diabetes	Disability days
100-----	18	-
500-----	40	-
1,000-----	60	400
2,000-----	80	560
3,000-----	100	720
5,000-----	130	960
10,000-----	180	1,200
20,000-----	240	1,760
30,000-----	260	2,160
50,000-----	280	2,800
100,000-----	320	4,400
200,000-----	-	6,400
500,000-----	-	12,000
750,000-----	-	16,800
1,250,000-----	-	23,600

*Illustration of use of table 1.*—The estimated number of persons who have received medical attention for diabetes is 1,525,000 (table 1). Since this figure is not shown in the table, it is necessary to interpolate for the standard error. The standard error for an estimate of 1,000,000 is 60,000 and the standard error for an estimate of 2,000,000 is 80,000. Interpolation gives 71,000 as the standard error for 1,525,000.

Table II. Standard errors of percentages based on persons with diabetes

When the base of the percentage is: (in thousands)	For estimated percentages of				
	2 or 98	5 or 95	10 or 90	25 or 75	50
	The approximate standard error (expressed in percentage points) is:				
100-----	2.9	4.5	5.4	7.8	10.3
500-----	1.3	2.0	2.4	3.5	4.6
1,000-----	0.9	1.4	1.7	2.5	3.3
2,000-----	0.6	1.0	1.2	1.8	2.3
3,000-----	0.6	0.8	1.0	1.4	1.9
5,000-----	0.4	0.6	0.8	1.1	1.4
10,000-----	0.3	0.5	0.6	0.8	1.0
20,000-----	0.2	0.3	0.4	0.6	0.7

Illustration of use of table II.—Of the 871,000 females reported as having diabetes, 71.6 percent had no chronic limitation of activity (table 21). Since neither of these values can be read directly from the table, interpolation may be carried out as follows: for a base of 500,000 a statistic of 50 percent has a standard error of 4.6 percentage points and a statistic of 75 percent has a standard error of 3.5 percentage points. Interpolating, with a base of 500,000 an estimate of 71.6 percent would have a standard error of 3.6 percentage points. Corresponding calculations with a base of 1,000,000 produce a standard error of 2.6 percentage points. A final interpolation between these two results yields an estimate of 2.9 percentage points for a statistic of 71.6 percent with a base of 871,000. (Although interpolation has been carried out in two dimensions here to illustrate the use of the table, a single scanning of the table will provide an approximate answer which will usually be sufficient.)

Table III. Standard errors of percentages based on disability days

When the base of the percentage is: (in thousands)	For estimated percentages of				
	2 or 98	5 or 95	10 or 90	25 or 75	50
	The approximate standard error (expressed in percentage points) is:				
2,500-----	3.4	5.2	7.2	10.4	12.0
12,500-----	1.5	2.3	3.2	4.6	5.4
25,000-----	1.0	1.7	2.2	3.3	3.8
50,000-----	0.7	1.2	1.6	2.3	2.7
75,000-----	0.6	1.0	1.3	1.9	2.2
125,000-----	0.5	0.7	1.0	1.4	1.7
250,000-----	0.3	0.6	0.7	1.0	1.2
500,000-----	0.2	0.4	0.5	0.7	0.9

Illustration of use of table III.—Of the 50,376,000 restricted-activity days due to diabetes, 29.3 percent were for persons 65-74 years of age. Since neither of these values can be read directly from the table, interpolation may be carried out as follows: with a base of 25,000,000 a statistic of 25 percent has a standard error of 3.3 percentage points and a statistic of 50 percent has a standard error of 3.8 percentage points. Interpolating, a statistic of 29.3 percent with a base of 25,000,000 would have a standard error of 3.4 percentage points. Corresponding calculations with a base of 50,000,000 produce a standard error of 2.4 percentage points. A final interpolation between these two results yields a standard error of 3.2 percentage points for a statistic of 29.3 percent with a base of 50,376,000. (Although interpolation has been carried out in two dimensions here to illustrate the use of the table, a single scanning of the table will provide an approximate answer which will be sufficient for most purposes.)

## APPENDIX II

### DEFINITIONS OF CERTAIN TERMS USED IN THIS REPORT

#### Terms Relating to Chronic Conditions.

**Condition.**—A condition is defined as any entry on the questionnaire which describes a departure from a state of physical or mental well-being. In the coding and tabulating process, conditions are first classified according to the type of disease, injury, or impairment, and then according to a number of other criteria such as whether they were medically attended, whether they resulted in disability, and whether they were acute or chronic. For the purposes of each published report or set of tables, only those conditions recorded on the questionnaire which satisfy certain stated criteria are included.

Conditions, except impairments, are coded by type according to the International Classification of Diseases, 1955 Revision, with certain modifications adopted to make the coding procedures more suitable for a household-interview-type survey. Impairments, consisting of selected chronic or permanent defects resulting from disease, injury, or congenital malformation, are coded according to a special supplementary classification which permits their classification by type and site, and also by etiology.

**Chronic condition.**—A condition is considered to be chronic if it is described by the respondent (1) in terms of one of the conditions on the "Check List of Chronic Conditions" or in terms of one of the impairments on the "Check List of Impairments" (Cards A and B, Appendix III), or (2) as having been first noticed more than three months before the interview. For this purpose, first noticed is defined as the time at which the person first felt sick or when he or his family was first told by a physician that he had a disease of which he was previously unaware. For a condition which is episodic in nature, the onset is always considered to be the original onset rather than the onset of the most recent episode.

**Prevalence of a condition.**—In general, the prevalence of a condition is the estimated number of cases existing in a population at a specific point in time or the average number existing during a specified period of time.

In the National Health Survey, the prevalence of a chronic condition is the number of cases reported to be present at the time of the interview or at any time during the 12 months prior to the interview. Estimates of the prevalence of chronic conditions may be restricted to cases which satisfy certain additional criteria. For example, only cases involving a day or more in bed during the past year or cases under care may be included.

**Medically attended condition.**—A condition is considered to be medically attended if a physician has been consulted about it either at its onset or at any time thereafter. Medical attention includes consultation either in person or by telephone for treatment or advice. Advice from the physician transmitted to the patient through the nurse is counted as well as visits to physicians in

clinics or hospitals. If during the course of a single visit the physician is consulted about more than one condition for each of several patients, each condition of each patient is counted as medically attended.

Discussions of a child's condition by the physician and a responsible member of the household are considered as medical attention even if the child was not seen at that time.

For the purpose of this definition, the term "physician" includes doctors of medicine and osteopathic physicians.

**Condition under care.**—By under care is meant one or more of the following: (1) currently taking medicine or treatment prescribed by a physician, (2) observing a systematic course of diet or activity prescribed by a physician, (3) visiting the physician regularly for checking on the condition, or (4) under instruction from the physician to return if some particular thing happens.

Physician is again defined as a doctor of medicine or an osteopathic physician.

#### Terms Relating to Disability

Disability is a general term used to describe any reduction of a person's activity as a result of an acute or chronic condition. It is measured in numbers of disability days, and for persons with one or more chronic conditions, it is also expressed by the extent to which they are limited in their major activity and their mobility.

**Disability days.**—Disability days are classified according to whether they are days of restricted activity, days in bed, days in the hospital, days lost from work, or days lost from school. All hospital days are, by definition, days of bed disability; all days of bed disability are, by definition, days of restricted activity. The converse form of these statements is, of course, not true. Days lost from work and days lost from school are also days of restricted activity for the working and school-age populations. Hence, restricted activity is the most inclusive term used in describing disability days.

**Restricted-activity day.**—A restricted-activity day is one on which because of a specific illness or injury a person substantially reduces the amount of activity normal for that day. The type of reduction will vary with the age and occupation of the individual as well as with the day of the week or the season. Restricted activity thus covers a range from substantial reduction of normal activity to complete inactivity.

**Bed-disability day.**—A bed-disability day is one on which more than half the daylight hours were spent in bed because of a specific illness or injury. All hospital days for inpatients are considered to be days of bed disability even if the patient was not actually in bed at the hospital.

**Work-loss day.**—A work-loss day is a normal working day on which a person did not work at his job or business because of a specific illness or injury. The

number of days lost from work is determined only for persons 17 years of age or older.

#### Chronic Activity and Mobility Limitation

Chronic activity limitation.—Chronic activity limitation is ascertained for all persons with one or more chronic conditions. See Cards C, D, E, and F, Appendix III. The replies indicate to what extent the person (worker, housewife, child, or other) is limited by his chronic disease(s) with respect to his ability to carry on the major (or usual) activity of the group of which he is a member. The person may be completely limited; may be able to carry on the major activity but be limited in the kinds and amounts of his activities; or may not be limited in any of these ways.

Chronic mobility limitation.—Persons with one or more chronic conditions are also classified with respect to the extent to which their mobility is limited.

See Card G, Appendix III, Degrees of limitation of mobility include being confined to the house all the time, or, if able to go outside, needing the help of another person or having trouble in getting about freely.

#### Demographic Terms

Age.—The age of the person on his last birthday recorded on the questionnaire in single years. Ages are then grouped in intervals suitable for the topic under discussion.

Usually working.—A term applied to an individual 17 years of age or older who was gainfully employed as a paid employee, a self-employed person, or as a worker in a family business for more than half of the 12 months prior to the interview. A person who does only volunteer or unpaid work—such as work in his own home or work for the church or community—is not considered to be gainfully employed.





## QUESTIONNAIRE

The items below show the exact content and wording of the questionnaire used in the household survey. The actual questionnaire is designed for a household as a unit and includes additional spaces for recording on more than one person.

CONFIDENTIAL
The Statistical Stock Survey is conducted by Public Law 812 of the 88th Congress (78 Stat. 489, 49 U.S.C. 360). All information which would permit identification of the individual will be held strictly confidential, will be used only by persons engaged in and for the purpose of the survey, and will not be disclosed or released to others for any other purposes (22 P.R. 1007).

Form HHS-2 (10-18-61)
U.S. DEPARTMENT OF COMMERCE  
BUREAU OF THE CENSUS  
Office of Collection, Data for the U.S. PUBLIC HEALTH SERVICE

B. General census  
of \_\_\_\_\_  
Quadrant \_\_\_\_\_  

1. Address or description of location

1. Date

2. Sub-sample weight

3. Sample

4. PUL Number

5. Region

6. Social class

1. Type of housing

2. Dwelling unit or quarters

3. Name of Special Dwelling Place

4. Code

5. How many other living quarters, occupied or vacant, in the building apartment? ☐ Yes ☐ No

6. Is this house on a farm or ranch? ☐ Yes ☐ No

7. What is the telephone number here? ☐ No phone

8. What is the best time to call? ☐ Day ☐ Night

9. Are there any other living quarters, occupied or vacant, in the building apartment? ☐ Yes ☐ No

10. Does anyone else living in this building use TOILET EXTERIOR to get to his living quarters? ☐ Yes ☐ No

11. Job at all other occupations

12. Is there any other building on this property for people to live in - either occupied or vacant? ☐ Yes ☐ No

INSTRUCTIONS

1. "Yes" or "no" in questions 11, 12 or 14 apply definitions of a dwelling unit as described whether one or more additional questionnaires should be filled out whether the living is in the apartment.

13. IN RECORD OF CHILDS AT RESIDENCE

1. Name

2. Sex

3. Date of Birth

4. Date of Death

5. Name

6. Sex

7. Date of Birth

8. Date of Death

14. IN REASON FOR NON-INTERVIEW

1. Reason

2. Reason

3. Reason

4. Reason

5. Reason

6. Reason

7. Reason

8. Reason

15. Consider as non-response

16. Signature of interviewer

17. Date

18. Special Instructions or notes

19. IN CASE OF RECORD OF CHILDS AT RESIDENCE

1. What is the name of the head of this household? (Print name in full column)

2. What were the names of all other persons who live here? (List all persons who usually live here, and all persons residing here who have no usual place of residence elsewhere. List their names in the prescribed order)

3. Is the sex (female) before or after the name? ☐ No ☐ Yes (Yes (last))

4. Is the date of birth (year) before or after the name? ☐ No ☐ Yes (Yes (last))

5. Is the date of death (year) before or after the name? ☐ No ☐ Yes (Yes (last))

6. Is the date of death (year) before or after the name? ☐ No ☐ Yes (Yes (last))

20. How are you related to the head of the household? (Enter relationship at head, for example: Head, wife, daughter, grandson, mother-in-law, partner, sister, brother's wife, etc.)

21. How old was your father last birthday?

22. How old was your mother last birthday?

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114. How old was your mother last birthday?

115. How old was your father last birthday?

116. How old was your mother last birthday?

117. How old was your father last birthday?

118. How old was your mother last birthday?





Card A	Card C	Card E	Card B
<b>NATIONAL HEALTH SURVEY</b> <b>Check List of Chronic Conditions</b> 1. Asthma 2. Any allergy 3. Chronic bronchitis 4. Repeated attacks of sinus trouble 5. Rheumatic fever 6. Hardening of the arteries 7. High blood pressure 8. Stroke 9. Trouble with varicose veins 10. Hemorrhoids or piles 11. Gallbladder or liver trouble 12. Stomach ulcer 13. Chronic rheumatism 14. Chronic trouble 15. Kidney stones or other kidney trouble 16. Arteriosclerosis or atherosclerosis 17. Repeated trouble 18. Thyroid trouble or goiter 19. Epilepsy or convulsions 20. Any kind of mental or nervous trouble 21. Repeated trouble with back or spine 22. Fear or cancer 23. Chronic skin trouble 24. Hernia or rupture	<b>NATIONAL HEALTH SURVEY</b> <b>For:</b> <b>Workers and other persons except themselves and children</b> 1. Cannot work at all at present. 2. Can work but limited in amount or kind of work. 3. Can work but, limited in kind or amount of outside activities. 4. Not limited in any of these ways.	<b>NATIONAL HEALTH SURVEY</b> <b>For:</b> <b>Children from 5 to 15 years old and others going to school</b> 1. Cannot go to school at all at present time. 2. Can go to school but limited to certain types of schools or in certain activities. 3. Can go to school but limited in kind of activities. 4. Not limited in any of these ways.	<b>NATIONAL HEALTH SURVEY</b> <b>Card B</b> <b>NATIONAL HEALTH SURVEY</b> <b>Family income during past 12 months</b> 1. Under \$100 (including taxes) 2. \$100 - \$299 3. \$300 - \$4,999 4. \$5,000 - \$9,999 5. \$10,000 - \$14,999 6. \$15,000 - \$19,999 7. \$20,000 - \$24,999 8. \$25,000 - \$29,999 9. \$30,000 and over.
<b>NATIONAL HEALTH SURVEY</b> <b>Check List of Impairments</b> 1. Stiffness or nervous trouble with hearing. 2. Ear/ear trouble with seeing, even with glasses. 3. Condition prevents vision, such as cleft palate or other fact. 4. Stammering or other trouble with speech. 5. Missing fingers, hand, or arm. 6. Missing legs, feet, or toes. 7. General palsy. 8. Paralysis of any kind. 9. Any permanent stiffness or deformity of the foot or leg, fingers, arm, or back.	<b>NATIONAL HEALTH SURVEY</b> <b>For:</b> <b>Housewife</b> 1. Cannot keep house at all at present. 2. Can keep house but limited in amount or kind of housework. 3. Can keep house but limited in kind of outside activities. 4. Not limited in any of these ways.	<b>NATIONAL HEALTH SURVEY</b> <b>For:</b> <b>Children under 5 years old</b> 1. Cannot take part at all in ordinary play with other children. 2. Can play with other children but limited in amount or kind of play. 3. Not limited in any of these ways.	<b>NATIONAL HEALTH SURVEY</b> <b>Card B</b> <b>NATIONAL HEALTH SURVEY</b> <b>Family income during past 12 months</b> 1. Under \$100 (including taxes) 2. \$100 - \$299 3. \$300 - \$4,999 4. \$5,000 - \$9,999 5. \$10,000 - \$14,999 6. \$15,000 - \$19,999 7. \$20,000 - \$24,999 8. \$25,000 - \$29,999 9. \$30,000 and over.





## SELECTED REPORTS FROM THE U. S. NATIONAL HEALTH SURVEY

### Series A. [Program descriptions, survey designs, concepts, and definitions]

- No. 1. Origin and Program of the U. S. National Health Survey. PHS Pub. No. 504-A1. Price 25 cents.
- No. 2. The Statistical Design of the Health Household-Interview Survey. PHS Pub. No. 504-A2. Price 35 cents.
- No. 3. Concepts and Definitions in the Health Household-Interview Survey. PHS Pub. No. 504-A3. Price 30 cents.

### Series B. [Health Interview Survey results by topics]

- No. 4. Acute Conditions, Incidence and Associated Disability, United States, July 1957-June 1958. PHS Pub. No. 504-B4. Price 35 cents.
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## Catalog Card

### U. S. National Health Survey.

Diabetes reported in Interviews, United States, July 1957-June 1958; statistics on prevalence of diabetes and associated disability by age, sex, and medical care status. Based on data collected in household interviews during the period July 1957-June 1958. Washington, U. S. Dept. of Health, Education, and Welfare, Public Health Service, Division of Public Health Methods, 1960.

22 p. tables. 28cm. (For health statistics, ser. 521)

U. S. Public Health Service. Publication no. 504-B21.

1. Diabetes - Stat. I. Title. [Series. Series: U. S. Public Health Service. Publication no. 504-B21.]

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